

KNAPP® -Adhesive **PU+** Fiber-reinforced 1-K-PUR- CONSTRUCTION ADHESIVE

Technical data sheet

Status: 02/2022

Page 1

Examples for Application

- | Aluminium window and door manufacturing for bonding corner connectors
- | Board joint bonding of cassettes in the wood, window, and door area
- | Staircase construction and building trade
- | For many assembly adhesions.
- | Various industrial fields

Special Properties

- | Fiber-reinforced
- | semi-hard adhesive joint
- | Solvent-free
- | Thixotropic, does not drip
- | Compatible with natural stone
- | Does not bleed into wood fibers due to the included structural pigments
- | Expands (foams) during the curing process!
- | Good adhesion properties to various wood and construction materials, ceramics, metals, hard and thermoplastic materials with appropriate surface preparation.
- | High bond strength in end-grain wood bonding
- | Good heat resistance.
- | Can subsequently be powder-coated (30 min/+200 °C)

Certificates / Test reports

ift Rosenheim

Achieves, for wood-to-wood bonding according to EN 204, stress group D4.

Test report No.: 505 33042/1 R1

ift Rosenheim

Achieves, for wood-to-wood bonding according to DIN EN 14257 (WATT 91), a heat resistance of 10.5 N/mm².

Test report No.: 505 33042/2 R1

French VOC-Emission class A+



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Technical data sheet

Status: 02/2022

Page 2

Technical Data

Basis	1-C-humidity-cross-linking polyurethane
Colour When cured	opaque
Viscosity at +20 °C	low viscous-pasty
Density as per EN 542 at +20 °C	approx. 1.14 g/cm ³
Skin formation time- dry at +20 °C, 50 % r. H., applied quantity 500 µm-PE/PVC	approx. 7 min
Skin formation time - wet at +20 °C, sprayed with water; applied quantity 500 µm-PE/PVC	approx. 3 min
Curing time at +20 °C, 50 % r. H. until approx. 75 % until it reaches the final strength	approx. 24 h approx. 7 d
Functional strength e.g. solid wood bonding at +20 °C	approx. 20 min
Applied quantity depending on carrier material	approx. 200 g/m ²
Processing temperatures adhesive and substrates	from +7 °C to +30 °C
Heat resistance as per DIN EN 14257 (WATT 91)	approx. 10,5 N/mm ²



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Technical data sheet

Status: 02/2022

Page 3

General Information

The bonded workpieces should only be painted after complete curing of the adhesive. Premature painting may result in blistering of the paint and cannot be excluded. In case of expected prolonged exposure to moisture, the adhesive joints/adhesive surfaces must be additionally sealed/protected with "suitable sealing compounds." The bonding of materials with different coefficients of thermal expansion must be evaluated, especially when subjected to varying temperature conditions, regarding their long-term behavior. The cured material may change in color due to UV exposure but not in the strength of the cured adhesive joint. Note: The viscosity of 1-component PUR adhesives is approximately twice as high at +15 °C during processing as it is at +25 °C. Skin formation time, open assembly time, as well as the required pressing and subsequent processing times can only be accurately determined through individual trials, as they are influenced by factors such as material, temperature, application quantity, humidity, material moisture, adhesive film thickness, pressing pressure, and other criteria. The user should provide appropriate safety margins in relation to the specified guideline values.

Preparation

Acclimate the product before processing.

The surfaces of the workpieces to be bonded must be dry, free from dust, and free from grease, and they should be cleaned.

Depending on the material surface, check if the bonding result can be improved by sanding or priming.

Polyolefins (including PE, PP) cannot be bonded without pretreatment, such as plasma or corona treatment. When bonding to PS-hard surfaces, priming is generally recommended.

For corrosion protection and for sealing of e.g. mitres and butt joints in the field of aluminium construction, the corrosion sealing compound COSMO® HD-100.411 or the color variants should be applied to the bare aluminum cut surfaces before bonding the connectors

Bonding

Apply the adhesive as a bead to one of the mating parts.

When bonding non-absorbent materials (material moisture <8%) together, the adhesive must also be "lightly dusted" with water to achieve complete curing.

During the skin formation time, the workpieces must be joined.

After joining, the parts should be fixed/pressed until functional strength is reached.



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Technical data sheet

Status: 02/2022

Page 4

Remove excess adhesive in its fresh state.

For adhesive joint thicknesses >2.5 mm, the curing, pressing, and full curing times are significantly longer, and adhesive joint thicknesses ≥ 5 mm should be avoided.

Bonding of metals

Bonding Aluminum, Copper, Brass: Only on chemically pre-treated or painted surfaces; these materials cannot be bonded durably and resistant to aging without proper pre-treatment of the bonding surfaces. We recommend obtaining sufficient information from the supplier due to the challenging definition of aluminum surfaces and qualities to determine optimal pre-treatments for the upcoming bonding; sufficient suitability tests are necessary.

Anodized surfaces, due to their diversity, age, and potential additional treatments like oiling or waxing, do not allow for a consistent statement regarding wettability or bondability of these bonding surfaces.

In stainless steel production and processing, auxiliary materials such as waxes, oils, etc., are often used, which cannot usually be removed by simple wiping cleaning; it has been shown that after cleaning with solvent cleaners, sanding or, preferably, sandblasting of the surface with subsequent repeated cleaning with solvents significantly improves bonding results.

Galvanized sheets must be protected from permanently acting, stagnant moisture "white rust formation." It must be ensured that moisture does not reach the bonding surface in such cases!

When bonding metals with absorbent materials (e.g., wood, construction materials, etc.), moisture can be slowly transported through the adhesive joint to the metallic surface by the absorbent material and can lead to corrosion damage to the metal. Therefore, the metallic bonding surface must have appropriate corrosion protection, such as paint or powder coating!

Powder coatings with PTFE content cannot be reliably bonded without pre-treatment (e.g., plasma treatment).

Bonding of Wood

Bonding larch: For larch bonding in outdoor applications, 1-component PUR adhesives should not be used as a rule. The wood components present or forming here, "Arabicum Galactan," significantly weaken/destroy the bond strength. No problems are known with PVAc and EPOXY adhesives.

For solid wood bonding, the adhesive should preferably be applied to both bonding surfaces. The pressure should be >1 N/mm².

For solid wood bonding in outdoor environments, depending on the wood type, weather exposure intensity, surface protection, and adhesive joint geometry, appropriate tests should be conducted for an optimal, durable bond.



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KNAPP® -Adhesive **PU+** Fiber-reinforced 1-K-PUR- CONSTRUCTION ADHESIVE

Technical data sheet

Status: 02/2022

Page 5

Important Notes

This product should be used by trained personnel in specialized businesses.

Our user instructions, processing guidelines, product or performance information, and other technical statements are only general guidelines. They describe the characteristics of our products (value specifications/determination at the time of production) and performance but do not constitute a guarantee in accordance with § 443 of the German Civil Code (BGB). Due to the variety of purposes for which each product is used and the specific circumstances (e.g., processing parameters, material properties, etc.), the user is responsible for conducting their own testing. Our free technical advice in verbal, written, and experimental form is non-binding.

Please also refer to the Safety Data Sheet.

Cleaning

Remove the fresh, not cured adhesive from the surfaces and the tools using COSMO® CL-300.150.

Cured adhesive can only be removed mechanically.

Storage

Store the original container tightly closed, in a dry place, at temperatures ranging from +15°C to +25°C, and away from direct sunlight.

The product can be exposed to temperatures ranging from -30°C to +35°C during normal transportation times.

Shelf life in the unopened original container: 24 months.

During storage, the viscosity increases, and reactivity decreases over time.

Packaging

310 ml PE-Euro cartridge,

net weight: 353 g 600 ml Alu/PP-tube bag, net weight: 670 g

Other trading units on request.



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